

09/03/2013
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BASKETBALL PRACTICING AND COLLECTING DEVICE

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BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a basketball practicing and collecting device, and more particularly to a basketball practicing and collecting device including a frame tube that can be turned horizontally, so that the user can practice the free throw in a determined direction.

2. Description of the Related Art

Usually, when a single person is practicing the basketball, he can face the backboard to practice the free throw. However, the exerciser cannot control the direction of the bouncing basketball, so that the basketball easily jumps far away irregularly, and the exerciser has to spend much time to pick up the basketball bouncing far away, thereby wasting a great of time for picking up the basketball, and thereby greatly reducing the exerciser's interest.

A conventional basketball practicing rack is provided to facilitate the user practicing the free throw of the basketball in a determined direction. The base of the conventional basketball practicing rack contains water therein for increasing the weight of the base so as to support the basketball practicing rack rigidly and stably.

However, it is necessary to directly fill the water into the base during the plastic injection molding process, so that the base needs to be sealed closely, thereby greatly increasing difficulty and cost of fabrication. In addition, the

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base easily is easily broken due to hit of a larger external force, so that the water leaks outward from the base, thereby causing instability of the basketball practicing rack.

SUMMARY OF THE INVENTION

5 The primary objective of the present invention is to provide a basketball practicing and collecting device including a frame tube that can be turned horizontally, so that the user can practice the free throw in a determined direction.

10 Another objective of the present invention is to provide a basketball practicing and collecting device, wherein when the frame tube is turned horizontally, the ball inlet opening and the collection channel are moved and directed toward the same direction, so that the basketball falling into the elastic net from the ball inlet opening can be collected and introduced outward through the collection channel, thereby facilitating the user practicing the free
15 throw in a determined direction.

A further objective of the present invention is to provide a basketball practicing and collecting device, wherein it is unnecessary to directly fill the water into the base, so that the base needs not to be sealed closely, thereby decreasing difficulty and cost of fabrication.

20 A further objective of the present invention is to provide a basketball practicing and collecting device, wherein the base can be used to store the

folded parts, thereby facilitating package, storage and transportation of the parts of the basketball practicing and collecting device.

In accordance with the present invention, there is provided a basketball practicing and collecting device, comprising:

- 5 a base containing a water bag therein;
- a first tube having a lower end secured on the base;
- a lift tube having a lower end retractably mounted on an upper end of the first tube;
- a second tube having a lower end retractably mounted on an upper 10 end of the lift tube, the second tube being formed with an elongated guide slot having a lower end formed with a locking recess vertical to the guide slot;
- a third tube having a lower end mounted on an upper end of the second tube and an upper end formed with a slide hole;
- a lower support rack having a first end secured on an upper end of the 15 third tube and a second end secured on a lower end of a backside of a backboard;
- a reduction motor secured on the lower support rack;
- a drive roller mounted on and rotated by the reduction motor;
- a driven roller secured on the lower support rack and located adjacent 20 to the drive roller;
- a frame tube urged between the drive roller and the driven roller;
- two opposite slide seats each mounted on the frame tube;

two opposite pulley members each secured on an upper end of the backside of the backboard;

a pull handle slidably mounted in the guide slot of the second tube; and

5 a pull cord secured on the pull handle and having two ends each extended through the second tube, the third tube, the slide hole of the third tube and a respective one of the two pulley members, and each secured on a respective one of the two slide seats.

Further benefits and advantages of the present invention will become
10 apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a basketball practicing and collecting device in accordance with the preferred embodiment of the present invention;

15 Fig. 1A is a partially cut-away enlarged view of the basketball practicing and collecting device as shown in Fig. 1;

Fig. 2 is a partially cut-away side plan view of the basketball practicing and collecting device as shown in Fig. 1;

Fig. 2A is a partially enlarged cross-sectional view of a frame tube of
20 the basketball practicing and collecting device as shown in Fig. 2;

Fig. 3 is a schematic operational view of the basketball practicing and collecting device as shown in Fig. 1 in adjustment;

Fig. 4 is a schematic top plan operational view of the basketball practicing and collecting device as shown in Fig. 1 in use;

Fig. 5 is a schematic folded view of the basketball practicing and collecting device as shown in Fig. 1 when not in use;

5 Fig. 5A is a partially cut-away enlarged view of the basketball practicing and collecting device as shown in Fig. 5;

Fig. 6 is a perspective view of a basketball practicing and collecting device in accordance with another embodiment of the present invention;

10 Fig. 6A is a partially cut-away enlarged view of the basketball practicing and collecting device as shown in Fig. 6;

Fig. 7 is a partially cut-away side plan cross-sectional view of a basketball practicing and collecting device in accordance with another embodiment of the present invention;

15 Fig. 8 is an exploded perspective view of a base of the basketball practicing and collecting device in accordance with the preferred embodiment of the present invention; and

Fig. 9 is a perspective folded view of the basketball practicing and collecting device as shown in Fig. 8.

DETAILED DESCRIPTION OF THE INVENTION

20 Referring to the drawings and initially to Figs. 1-5, a basketball practicing and collecting device 10 in accordance with the preferred

embodiment of the present invention comprises a base 20, a first tube 12, a lift tube 14, a second tube 13, and a third tube 15.

The first tube 12 has a lower end secured on the base 20.

The lift tube 14 has a lower end retractably mounted on an upper end
5 of the first tube 12 by a first snap ring 16.

The second tube 13 has a lower end retractably mounted on an upper
end of the lift tube 14 by a second snap ring 160.

The third tube 15 has a lower end mounted on an upper end of the
second tube 13.

10 The basketball practicing and collecting device 10 further comprises
an upper support rack 152 having a first end secured on an upper end of the
third tube 15 and a second end secured on an upper end of a backside of a
backboard 11, a lower support rack 153 having a first end secured on the upper
end of the third tube 15 and a second end secured on a lower end of the
15 backside of the backboard 11, a reduction motor 154 secured on the lower
support rack 153, a drive roller 155 mounted on and rotated by the reduction
motor 154, a driven roller 156 secured on the lower support rack 153 and
located adjacent to the drive roller 155, and a frame tube 18 urged between the
drive roller 155 and the driven roller 156. Preferably, the drive roller 155 is
20 made of rubber, and the driven roller 156 is made of rubber.

The second tube 13 is formed with an elongated guide slot 131. The
guide slot 131 of the second tube 13 has a lower end formed with a locking

recess 1310 vertical to the guide slot 131. The third tube 15 has a top formed with a slide hole 151. The basketball practicing and collecting device 10 further comprises two opposite pulley members 111 each secured on the upper end of the backside of the backboard 11, two opposite slide seats 19 each 5 mounted on the frame tube 18, a pull handle 132 slidably mounted in the guide slot 131 of the second tube 13, and a pull cord 17 secured on the pull handle 132 and having two ends each extended through the second tube 13, the third tube 15, the slide hole 151 of the third tube 15 and a respective one of the two opposite pulley members 111, and each secured on a respective one of the two 10 opposite slide seats 19.

In such a manner, when the pull handle 132 is moved downward in the guide slot 131 of the second tube 13 and locked in the locking recess 1310 as shown in Fig. 1, the pull cord 17 is pulled downward by the pull handle 132 to pull the two opposite slide seats 19 upward, thereby pivoting the frame tube 15 18 to move upward so as to stretch the frame tube 18, so that the backboard 11 is compassed in the frame tube 18.

At this time, the drive roller 155 is rotated by the reduction motor 154, and the frame tube 18 is held and urged between the drive roller 155 and the driven roller 156, so that the frame tube 18 is turned horizontally by rotation of 20 the drive roller 155 and the driven roller 156 as shown in Fig. 1A.

The frame tube 18 is a ring-shaped tube and has a side formed with a ball inlet opening 181 for passage of the basketball. The frame tube 18 has a

lower portion provided with an elastic net 182 encompassing the backboard 11.

The elastic net 182 has a lower portion provided with a collection channel 183.

Thus, the basketball falling into the elastic net 182 can be collected and introduced outward through the collection channel 183.

5 As shown in Figs. 2 and 2A, the frame tube 18 is provided with a plurality of net hooks 187 for hanging the elastic net 182, so that the elastic net 182 can be mounted on and detached from the frame tube 18 easily and conveniently.

As shown in Fig. 3, the first snap ring 16 can be released to adjust the
10 distance between the lift tube 14 and the first tube 12, thereby adjusting the length of the basketball practicing and collecting device 10 so as to satisfy the user's requirement.

As shown in Figs. 1 and 4, the drive roller 155 is rotated by the reduction motor 154, and the frame tube 18 is held and urged between the drive
15 roller 155 and the driven roller 156, so that the frame tube 18 is turned horizontally by rotation of the drive roller 155 and the driven roller 156, so as to change the position of the ball inlet opening 181 of the frame tube 18, thereby facilitating the user practicing the free throw in a determined direction.

As shown in Figs. 5 and 5A, the pull handle 132 is detached from the
20 locking recess 1310, so that the pull handle 132 can be moved upward in the guide slot 131 of the second tube 13 until the pull handle 132 is stopped by the top end of the guide slot 131 of the second tube 13. At the same time, the pull

cord 17 is moved upward by the pull handle 132 to loosen and release the two opposite slide seats 19, so that the frame tube 18 is pivoted to move downward, thereby detaching the frame tube 18 from the backboard 11.

At this time, the drive roller 155 is rotated by the reduction motor 154,
5 and the frame tube 18 is held and urged between the drive roller 155 and the driven roller 156, so that the frame tube 18 is turned horizontally by rotation of the drive roller 155 and the driven roller 156 and is moved to the backside the backboard 11, thereby returning the basketball rack to the original normal state.

10 Referring to Figs. 6 and 6A, the basketball practicing and collecting device in accordance with another embodiment of the present invention is shown, wherein the top end of the third tube 15 is provided with two opposite pulley members 157 for mounting the two ends of the pull cord 17, thereby facilitating movement of the two ends of the pull cord 17.

15 Referring to Fig. 7, the basketball practicing and collecting device in accordance with another embodiment of the present invention is shown, wherein each of the two opposite slide seats 184 is mounted on the frame tube 18 and is provided with an upper wheel 185 made of rubber and a lower wheel 186 made of rubber, with the frame tube 18 being sandwiched between the
20 upper wheel 185 and the lower wheel 186, so as to decrease the sliding friction of the frame tube 18, thereby increasing the lifetime of the frame tube 18.

Referring to Figs. 8 and 9, the basketball practicing and collecting device further comprises a first support frame 21 and a second support frame 22 mounted on the first tube 12 to support the basketball practicing and collecting device. The base 20 is removably mounted on the first support frame 5 21 and the second support frame 22, thereby enhancing the stability of the basketball practicing and collecting device. In addition, the base 20 is a removable box containing a water bag 23 therein. The water bag 23 has a water inlet 24 for introducing the water into the water bag 23. Thus, the water bag 23 can increase the weight of the base 20 so as to support the basketball practicing 10 and collecting device rigidly and stably. In addition, the base 20 can be used to store the tube 13, the first support frame 21 and the second support frame 22, thereby facilitating package, storage and transportation of the parts of the basketball practicing and collecting device.

Accordingly, the frame tube 18 is turned horizontally so as to change 15 the position of the ball inlet opening 181, thereby facilitating the user practicing the free throw in a determined direction. In addition, when the frame tube is turned horizontally, the ball inlet opening and the collection channel are moved and directed toward the same direction, so that the basketball falling into the elastic net from the ball inlet opening can be collected and introduced 20 outward through the collection channel, thereby facilitating the user practicing the free throw in a determined direction. Further, it is unnecessary to directly fill the water into the base 20, so that the base 20 needs not to be sealed closely,

thereby decreasing difficulty and cost of fabrication. Further, the base 20 can be used to store the folded parts, thereby facilitating package, storage and transportation of the parts of the basketball practicing and collecting device.

Although the invention has been explained in relation to its preferred embodiment(s) as mentioned above, it is to be understood that many other possible modifications and variations can be made without departing from the scope of the present invention. It is, therefore, contemplated that the appended claim or claims will cover such modifications and variations that fall within the true scope of the invention.